IN THE CLAIMS

Please amend the claims as follows:

Claims 1-26 (Canceled).

Claim 27 (Currently Amended): A method of screening [[the]] operating conditions of a coupling reaction of at least two functional groups, comprising ~~which comprises the following steps~~:

i) reacting together at least two compounds:

[[•]] a first compound of formula E_1-X_1-G_1 in which G_1 represents a first of said at least two functional groups, X_1 represents a covalent bond or a first spacer group, ~~while~~ and E_1 represents the residue of a first molecule M_1 for which a first specific antibody AC_1 is available[[,]]; and

[[•]] a second compound of formula E_2-X_2-G_2 in which G_2 represents a second of said at least two functional groups, X_2 represents a covalent bond or a second spacer group, which ~~may be~~ is optionally identical to or different from X_1, ~~while~~ and E_2 represents either [[the]]a residue of a second molecule M_2 that is different from M_1 and for which a second specific antibody AC_2 is available, or a group capable of forming at least one covalent bond with the antibody AC_1 in the presence of a coupling agent[[;]],

wherein said at least two compounds ~~being reacted~~ are reacted in a solution comprising ~~in~~ a solvent ~~and~~ under predetermined operating conditions~~, at least one of which is~~ comprising a candidate operating condition~~, in order~~ to obtain a reaction medium and ~~the formation,~~ in [[this]]the reaction medium, ~~of~~ to obtain a compound Z comprising the chain E_1-X_1-G_1-G_2-X_2-E_2 comprising the E_1, X_1, E_1 and E_2 ~~in which X_1, X_2, E_1 and E_2 have the same meaning as above, while~~, wherein G_1-G_2 represents the group of atoms resulting from the coupling of said at least two functional groups;

ii) determining the concentration of the obtained compound Z in the reaction medium at a predetermined reaction time t, by ~~means of~~ at least one immunoassay ~~using~~ comprising at least the antibody AC_1; and

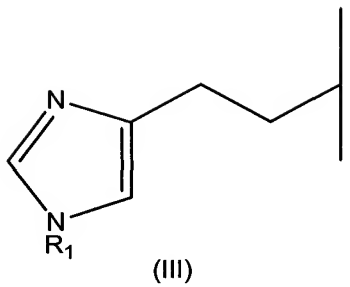
iii) evaluating the effects of the candidate operating condition(s) on said coupling reaction ~~using~~ by the concentration of compound Z thus determined.

Claim 28 (Currently Amended): The method according to Claim 27, ~~in which~~ wherein the coupling reaction is ~~chosen~~ selected from the group consisting of esterification reactions, amidation reactions, aldolization and nitroaldolization reactions, the Heck reaction, the Baylis-Hillman reaction, the Michael reaction, metathesis reactions, the Diels-Alder reaction, the Sonogashira reaction, the Suzuki reaction, the Kumada reaction, the Stille reaction, the Hiyama reaction, the Liebeskind-Srogl reaction, the Mannich reaction, the Hantzsch reaction, the reaction comprising coupling an α-ketoaldehyde with a carboxylic acid and an isonitrile to obain an oxazole ~~of Bossio et al.~~, the Ugi reaction, and variants thereof.

Claim 29 (Previously Presented): The method according to Claim 27, in which E_1 or E_2 represents the histamine residue.

Claim 30 (Canceled).

Claim 31 (Currently Amended): The method according to Claim 29, in which E_1 or E_2 ~~corresponds to~~ is a compound of formula (III) below:



(III)

in which R_1 represents a hydrogen atom or a protective group.

Claim 32 (Canceled).

Claim 33 (Previously Presented): The method according to Claim 27, in which E2 represents a group chosen from amine, carboxylic acid, aldehyde, thiol, phenol, alkenyl and azide groups, and photoactivatable groups.

Claim 34 (Previously Presented): The method according to Claim 33, in which E_2 represents an amine or thiol group.

Claim 35 (Previously Presented): The method according to Claim 27, in which said at least one immunoassay for the compound Z is a solid-phase assay.

Claim 36 (Canceled).

Claim 37 (Currently Amended): The method according to Claim 27, wherein ~~in which, since~~ E_2 ~~corresponds to~~ is a group capable of forming at least one covalent bond with the first antibody AC_1, ~~step~~ and the ii) comprises ~~the following steps~~:

a_2) bringing the reaction medium obtained at reaction time t into contact with a solid phase on which the first antibody AC_1 is immobilized, so as to obtain the attachment of the compound Z to ~~this~~ the solid phase by immunobinding between [[this]]the antibody AC_1 and the residue E_1 of [[this]]the compound Z;

b_2) reacting a coupling agent with the first antibody AC_1 immobilized on the solid phase and the group E_2 of the compound Z attached to [[this]]the solid phase, so as to obtain the formation of one or more covalent bonds between [[this]]the antibody AC_1 and [[this]]the group E_2;

c_2) denaturing the immunobond which exists between the first antibody AC_1 immobilized on the solid phase and the residue E_2 of the compound Z attached to [[this]]the solid phase, so as to release [[this]]the residue E_2 from [[this]]the solid phase;

d_2) bringing the solid phase into contact with a conjugate comprising the first antibody AC_1 coupled to a label, so as to obtain the attachment of [[this]]the conjugate to [[this]]the solid phase by immunobinding between [[said]]the antibody AC_1 and the residue E_1 of the compound E_1-X-G_1-G_2-Y-E_2 thus released;

e_2) measuring the amount of conjugate attached to the solid phase by ~~means of~~ the label coupled to the antibody AC_1; and

f_2) determining, on a standard range, the concentration of compound Z in the reaction medium at said time t, from the amount of conjugate thus measured;

said [[step]] ii) [[also]]further comprising one or more operations comprising ~~consisting in~~ washing the solid phase, between [[steps]] a_2) and b_2), b_2) and c_2), c_2) and d_2), and between [[steps]] d_2) and e_2).

Claim 38 (Previously Presented): The method according to Claim 27, in which the first antibody AC_1 is a monoclonal antibody.

Claim 39 (Canceled).

Claim 40 (Previously Presented): The method according to Claim 27, in which the solid phase is the wall of a well of a microtitration plate onto which the first antibody AC_1 is adsorbed.

Claim 41 (Canceled).

Claim 42 (Currently Amended): The method according to Claim 27, which comprises an operation comprising ~~consisting of~~ dilution of the reaction medium between the [[steps]] i) and ii).

Claim 43 (Previously Presented): The method according to Claim 27, in which the yield of the coupling reaction is determined from the concentration of compound Z in the reaction medium.

Claim 44 (Currently Amended): The method according to Claim 27, in which the coupling reaction ~~consists in~~ comprises coupling 2, 3 or 4 functional groups.

Claim 45 (Currently Amended): The method according to Claim 44, in which the coupling reaction ~~consists in~~ comprises coupling two functional groups G_1 and G_2, and in which:

~~in step i),~~ the compounds of formulae E_1-X_1-G_1 and E_2-X_2-G_2 are reacted together so as to obtain ~~the formation~~, in the reaction medium, ~~of~~ a compound Z of ~~which~~

~~corresponds to~~ the formula E_1-X_1-G_1-G_2-X_2-E_2 ~~in which X_1, X_2, E_1 and E_2 have the same meaning as above and~~ wherein the G_1-G_2 represents the group of atoms resulting from the coupling between said functional groups G_1 and G_2; ~~while~~ and

~~in step ii),~~ the concentration of compound Z in the reaction medium is determined by ~~means of a single~~ one immunoassay.

Claim 46 (Canceled).

Claim 47 (Canceled).

Claim 48 (Currently Amended): The method according to Claim 27, in which the candidate operating condition(s) is(are) ~~chosen~~ selected from the group consisting of solvents, catalysts, temperature levels, pressure levels, the use of ultrasound, concentrations, stoichiometric ratios, reaction times and combinations thereof.

Claim 49 (Previously Presented): The method according to Claim 27, in which the candidate operating condition(s) is(are) catalysts.

Claim 50 (Currently Amended): A kit for carrying out a method of screening the operating conditions of a coupling reaction of at least two functional groups, comprising ~~which comprises~~ suitable amounts:

[[-]] of at least two compounds reacting ~~intended to react~~ together, comprising:

[[•]] a first compound of formula E_1-X_1-G_1 in which G_1 represents a first of said at least two functional groups, X_1 represents a covalent bond or a first spacer group and E_1 represents the residue of a first molecule M_1; and

[[•]] a second compound of formula E_2-X_2-G_2 in which G_2 represents a second of said at least two functional groups, X_2 represents a covalent bond or a second spacer group, which ~~may be~~ is optionally identical to or different from X_1, and E_2 represents the residue of a second molecule M_2 which is different from M_1;

[[-]] of at least two antibodies comprising:

[[•]] a first antibody AC_1 specific for the first molecule M_1, [[this]]the antibody AC_1 being optionally attached to a plurality of solid phases; and

[[•]] a second antibody AC_2 specific for the second molecule M_2, [[this]]the antibody AC_2 being coupled to a label;

[[-]] of a compound Z comprising the chain E_1-X_1-G_1-G_2-X_2-E_2 ~~in which X_1, X_2, E_1 and E_2 have the same meaning as above, while~~ , wherein the G_1-G_2 represents the group of atoms resulting from the coupling of said at least two functional groups; and, optionally:

[[-]] of a reagent for visualizing the label~~, for example a substrate if the label is an enzyme~~; and

[[-]] of suitably chosen buffers.

Claim 51 (Currently Amended): A kit for carrying out a method of screening the operating conditions of a coupling reaction of at least two functional groups, comprising ~~which comprises~~ suitable amounts:

[[-]] of at least two compounds reacting ~~intended to react~~ together comprising:

[[•]] a first compound of formula E_1-X_1-G_1 in which G_1 represents a first of said at least two functional groups, X_1 represents a covalent bond or a first spacer group and E_1 represents the residue of a first molecule M_1; and

[[•]] a second compound of formula E_2-X_2-G_2 in which G_2 represents a second of said at least two functional groups, X_2 represents a covalent bond or a second spacer group, that may be identical to or different from X_1, and E_2 represents a group capable of forming one or more covalent bonds with an antibody specific for the molecule M_1 in the presence of a coupling agent;

[[-]] of at least one antibody, this antibody being said antibody specific for the molecule M_1;

[[-]] of a conjugate comprising said antibody specific for the molecule M_1 coupled to a label;

[[-]] of a compound Z comprising the chain E_1-X_1-G_1-G_2-X_2-E_2 ~~in which X_1, X_2, E_1 and E_2 have the same meaning as above, while,~~ wherein G_1-G_2 represents [[the]]a group of atoms resulting from the coupling of said at least two functional groups; and[[,]] optionally[[:]]

[[-]] of at least one of a reagent for visualizing the label, a coupling agent, a reagent capable of denaturing an immunobond, and suitably chosen buffers.

~~of a coupling agent,~~

~~of a reagent capable of denaturing an immunobond, and~~

~~of suitably chosen buffers.~~

Claim 52 (Currently Amended): A method for the screening of catalysts ~~that are useful~~ in a coupling reaction between two functional groups, comprising ~~utilizing~~ the screening method according to Claim 27.

Claim 53 (Canceled).

Claim 54 (New): The method according to Claim 27, comprising:

i) reacting together at least two compounds:

a first compound of formula E_1-X_1-G_1 in which G_1 represents a first of said at least two functional groups, X_1 represents a covalent bond or a first spacer group, and E_1 represents the residue of a first molecule M_1 for which a first specific antibody AC_1 is available; and

a second compound of formula E_2-X_2-G_2 in which G_2 represents a second of said at least two functional groups, X_2 represents a covalent bond or a second spacer group, which is optionally identical to or different from X_1, and E_2 represents either a residue of a second molecule M_2 that is different from M_1 and for which a second specific antibody AC_2 is available, or a group capable of forming at least one covalent bond with the antibody AC_1 in the presence of a coupling agent,

wherein said at least two compounds are reacted in a solution comprising a solvent ~~and~~ under predetermined operating conditions comprising a candidate operating condition to obtain a reaction medium and in the reaction medium, to obtain a compound Z comprising the chain E_1-X_1-G_1-G_2-X_2-E_2 comprising the E_1, X_1, E_1 and E_2, wherein G_1-G_2 represents the group of atoms resulting from the coupling of said at least two functional groups and the compound Z is attached to a conjugate attached to a solid phase;

ii) determining the concentration of the obtained compound Z in the reaction medium at a predetermined reaction time t, by at least one immunoassay comprising at least the antibody AC_1; and

iii) evaluating the effects of the candidate operating condition(s) on said coupling reaction by the concentration of compound Z thus determined.